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AMERICAN HOLLY

. . . *an American wood*

American holly is the only one of more than a dozen holly species in the United States used in wood products. Best development is in the South although its range extends up the East Coast and into the Ohio Valley. Its ivory-white heartwood is unique. Though used in many specialty products, it has never been used in large amounts. The wood is hard, moderately heavy, works well with tools, and will take almost any dye or stain. Commercially, Christmas decorations made from the foliage and fruit are holly's primary use.

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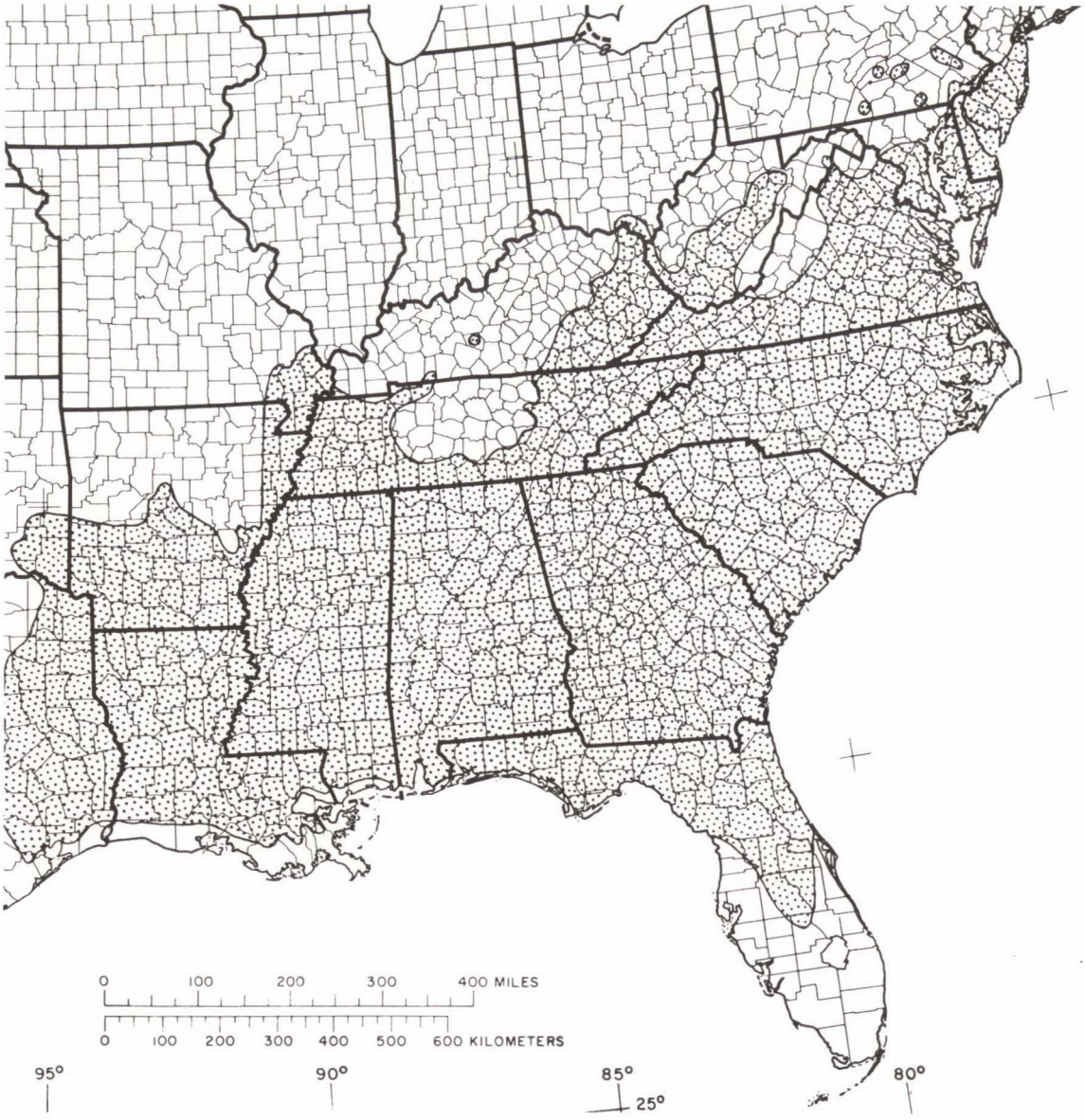

Figure 1.—Natural range of American holly.

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AMERICAN HOLLY

. . . an American wood

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DISTRIBUTION

American holly (*Ilex opaca* Ait.) occurs from Massachusetts to Florida and westward through the Gulf States (fig. 1). Its western limits are Texas and Oklahoma. New York, Pennsylvania, Ohio, Indiana, Illinois, and southeastern Missouri probably define the species' northern boundary. Several range descriptions mention American holly occurring in southern Maine.

DESCRIPTION AND GROWTH

Sizes of American holly vary considerably, from bushy shrubs to small 40- to 50-foot-tall trees on to moderately-sized trees of 60 to 70 feet in height and 2 feet in diameter. Larger trees, to a maximum of 100 feet by 4 feet, have been recorded. Growth rate is poor, and American holly may take from 100 to 150 years to mature. It generally occurs as an understory tree in the forest since it is very tolerant of shade.

In southern bottomlands, American holly occurs principally in minor stream bottoms but is also found on high ridges of the oldest alluvium and in most hummocks. In the uplands, it is widely scattered on all but the driest and wettest sites. In the northeast, American holly grows, or persists, in rather dry, gravelly soil. Along the east coast it seems to be quite resistant to salt-water spray.

American holly grows best and reaches its greatest development in Alabama and in southern Arkansas, Louisiana, and east Texas, on well drained, moist soils.

American holly has a rounded or pyramidal crown, which is generally dense, and a short bole. Bark may be light or dark gray, is thin, and often has small, wart-like projections (fig. 2).

American holly leaves are persistent, green and leathery, simple and alternate, and variable as to shape, size, and number of spines, or are even spineless. They are 2 to 4 inches long by 1 to 1½ inches wide and are described as ovate to oblong to oval to elliptical (fig. 3). The evergreen leaves usually fall in the spring of their third year.

Flowers develop from April to June, and are white or greenish. The male and female flowers most often are borne separately on different plants. In nature there is usually a ratio of about one pistillate tree to four or more staminate trees. Sex cannot be distinguished until blooming, which probably occurs no earlier than age 5 and may not occur until 10 to 15 years of age.

The fruit is a round drupe about ⅜ inch in diameter, which matures in November and December, and is red, or scarlet, but may rarely be yellow or orange (fig. 3). Birds seem to like the fruit. They, and other animals, as well as gravity, are the primary means of seed dispersal.

Seeds usually take from 1 to 3 years to germinate. Natural regeneration is commonly quite sparse but dependable, occurring in partial openings in groups rather than single trees.

American holly has no particular insect or disease problems although leaf miners, spittle bugs, scale insects, red mites, and black mold have been associated with the species.

In *Forest Cover Types of North America*, American holly is not listed as a type or as an associated species within a type.

COMMON NAMES

American holly is probably best known as holly, and also is known as Yule holly, Christmas holly, and white holly.

RELATED COMMERCIAL SPECIES

Holly is not related with other species although a little holly lumber is mixed in with other light-colored species, such as black gum and magnolia.

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NOTE.—This publication supersedes unnumbered publication *American Holly*, issued 1953.

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Figure 2.—American holly bark.

SUPPLY

In the previous version of this publication (1953), the wood supply was reported to be at least 5 million board feet. No new data are available.

PRODUCTION

Even though a dozen mills in the South manufacture holly lumber and holly has been used commercially for many years, the supply is limited. Harvesting is mainly restricted to short logs and bolts. At best, the annual production can only be guessed at 60,000 to 75,000 board feet annually. The latest figure listed in the 1953 version was 126,000 board feet cut in 1943.

CHARACTERISTICS AND PROPERTIES

American holly has been described as the whitest wood known, with white sapwood and ivory-white heartwood. The color of the latter makes American holly distinct among North American woods. Some American holly has a bluish cast, but this is from bacteria stain.

The wood is without any characteristic odor or taste, is diffuse porous, of uniform texture and close grained. It will take almost any dye or stain. Growth rings are barely distinct.

The wood is hard, moderately heavy and dense, and has a specific gravity of 0.61 oven dry and about 0.50 green. It is moderately strong in bending, moderately weak in endwise compression, and high in shock resistance.

Although American holly will hold its shape satisfactorily once it is seasoned, it shrinks considerably and will check or warp badly unless dried properly.

American holly is not durable when exposed to conditions favoring decay.

The wood carves and works well with tools and turns well with lathes.

PRINCIPAL USES

The principal use of American holly is not as wood but as foliage and fruit for Christmas wreaths and decorations. The destructive harvesting used in gathering this seasonal product has nearly eliminated American holly from natural stands in certain sections of the country.

The wood of American holly has been used in many ways and places but never in large amounts. The primary use is specialty products, although it has been listed as being used for face and commercial veneer,

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Figure 3.—American holly leaves and fruit.

package veneer and slack cooperage, and as pulpwood in very limited amounts.

Specialty uses include: Cabinetmaking, mainly for such fancy inlay work as ornamental veneer borders or block inlays; small pieces of furniture and furniture inlays; interior finish; fixtures; brush backs; handles; turnery; novelties; wood engravings; scroll work; woodcuts and carvings; measuring scales and rules for scientific instruments; and in musical instruments—when dyed black to imitate ebony—for piano keys, violin pegs, and fingerboards.

REFERENCES

Brown, H. P., A. I. Panshin, and C. C. Forsaith.
1949. Textbook of wood technology. Vol. 1, 652 p., New York: McGraw-Hill Book Co.

Gleason, Henry A.
1958. Britton and Brown illustrated flora of the northeastern United States and adjacent Canada. Vol. 2, 655 p., Lancaster, Pa.: Lancaster Press, Inc.

Harlow, William M., and Ellwood S. Harrar.
1968. Textbook of dendrology. Ed. 5, 512 p., Amer. Forestry Series. New York: McGraw-Hill Book Co.

Panshin, A. I., E. S. Harrar, W. J. Baker, and P. B. Proctor.
1950. Forest products. 549 p., New York: McGraw-Hill Book Co.

Putnam, John A., George M. Furnival, and J. S. McKnight.
1960. Management and inventory of southern hardwoods. U.S. Dep. Agric. Handb. 181, 102 p.

Society of American Foresters
1954. Forest cover types of North America (exclusive of Mexico). 67 p. Washington, D.C.

Southern Hardwood Lumber Manufacturers Association
1964. The southern hardwoods. 52 p., Memphis, Tenn.

Southern Hardwood Lumber Manufacturers Association
1971. Southern hardwood buyers' guide. 27 p. Memphis, Tenn.

U.S. Forest Service
1948. Woody-plant seed manual. U.S. Dep. Agric., Misc. Publ. 654, 416 p.

Vines, Robert A.
1960. Trees, shrubs, and woody vines of the Southwest. 1104 p., Austin: Univ. Texas Press.

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